MECHANICAL ENGINEERING DEPARTMENT
UNITED STATES NAVAL ACADEMY
ANNAPOLIS, MD 21402
12 January 2004

Critical Design Reviews

The purpose of the Critical Design Review is to formally present the information that you submitted in your Concept Package at the end of last semester. The presentation should outline a specific solution to the problem being addressed by the project. At this stage the technical development of the solution should be sufficient to meet the objectives of the project.

The presentation should address the following areas:

Brief Background and Problem Statement

Objectives

Technical Approach

Program Management

Budget.

Problem Statement: This section defines the need that exists and provides background information to support the need. (Do not assume that the audience is familiar with your project.) This part of the presentation should include a concise statement of the problem to be solved.

Objectives: The specific project objectives should be summarized. A bulleted list is often an effective way of quickly presenting this information. Make sure that your objectives are measureable (as much as possible).

Technical Approach: This is the main portion of the presentation and should describe the approach that is being taken to produce a solution to the given problem. Make sure that the solution addresses each of the objectives. Design detail is provided that shows the audience how each objective is being met. Do not present detailed calculations (you don't have the time for that) but be prepared to answer questions about the details and have supporting calculations ready if needed. Detail your plans for completing remaining design tasks and how you plan to demonstrate that the objectives are met.

You're familiar with the expression, "A picture is worth a thousand words." With this in mind, drawings, photos and sketches are very effective for communicating your concepts. Bullet slides are not nearly as effective here. Prototypes and scale models are worth tens of thousands of words!

Program Management: Do not waste time presenting a Gantt chart that the audience can't read. It is acceptable to have an up-to-date hard copy of the chart available for review. You may wish to summarize the critical path and identify any potential problems or delays.

Budget: A single slide that summarizes the project budget. These expenditures are broken into two categories:

USNA Dollars – the cost of goods and services obtained within USNA, but not actually costed to the project directly such as machine shop services, materials from the shop, consulting with faculty

Department Money – real costs incurred by the department for purchasing supplies for your project, travel costs to attend competitions, etc.

At this stage of the project the costs incurred to date are presented, as well as the projected cost to complete the project.

A few things to keep in mind:

- You only have 15 minutes of presentation time. Approximately two-thirds of the time should focus on the technical approach. Practice your presentation and make sure that you can make a complete and concise presentation of the introductory material so you have time to present the technical information. Running over the alloted time will count against you.
- A computer with a floppy, 100MB Zip drive and a CD and PowerPoint will be available. You will not have internet access so you must bring your files to load onto the computer or you may bring your own laptop if you have one. Come prepared with vu-graphs in case the hardware fails or plan to use vu-graphs only.
- Keep special effects to a minimum. They are fun the first time around but quickly become distracting. Too often they don't work correctly when viewed on different hardware and detract from the quality of your presentation.

Everyone is required to watch and evaluate at least one other presentation. Make sure that you complete and submit an evaluation form and include your name for accountability.

Assoc. Prof. R.E. Link

EM472 MECHANICAL DESIGN

Critical Design Review Evaluation

PROBLEM STATEMENT / OBJECTIVES (25)

Fair

Good

Excellent

TECHNICAL APPROACH and PLAN (25)

Fair

Good

Excellent

PROGRESS TO DATE (25)

Fair

Good

Excellent

PRESENTATION QUALITY (25)

Fair

Good

Excellent